

In the claims:

Presented below are the claims, as amended, with changes entered and not marked.

1. (Currently Amended) A method comprising:

receiving an incoming call at a voice mail port of a voice mail system ~~an automated attendant~~ from a connected private telephone switch, the telephone switch being coupled between the PSTN and a plurality of individual subscriber telephones, the incoming call coming to the switch through the PSTN, the voice mail system having greeting and message storage for at least some of the plurality of individual subscriber telephones, the incoming call being directed to one of the plurality of individual subscriber telephones;

receiving a call handle associated with the incoming call at the voice mail system ~~automated attendant~~ from the telephone switch, the call handle being generated by the switch independent of the caller's identity and any data received from the caller;

receiving an indication from the switch of whether the call has been previously handled by the voice mail system;

applying the call handle to a database of the voice mail system to retrieve caller information stored in the voice mail system database that is associated with the call handle, if the call has been previously handled by the voice mail system; and

using the retrieved caller information at the voice mail system ~~automated attendant~~ to handle the call if caller information associated with the call handle is found; and

asking the caller to enter personal selections, if the call has not been previously handled by the voice mail system.

2. (Currently Amended) The method of claim 1, wherein receiving a call handle comprises receiving a tone sequence at a port of the voice mail system automated attendant, decoding the tone sequence, and deriving the call handle from the decoded tone sequence.

3. (Previously Presented) The method of claim 2, wherein the tone sequence is a DTMF tone sequence transmitted to the port over the same transmission line as the incoming call.

4. (Original) The method of claim 1, wherein receiving a call handle comprises receiving a call handle message through a digital interface.

5. (Previously Presented) The method of claim 4, wherein the digital interface comprises a digital backplane connection to a switch from which the incoming call was received.

6. (Previously Presented) The method of claim 1, further comprising requesting data from the caller and storing received data in association with the call handle.

7. (Original) The method of claim 1, wherein using the retrieved caller information comprises providing audio information in a language previously selected by the caller.

8. (Original) The method of claim 1, if no caller information associated with the call handle is found, further comprising:

requesting caller information from the caller;

storing received caller information in association with the call handle; and

using the received caller information to handle the call.

9. (Currently Amended) The method of claim 1, wherein receiving an indication of whether the call has been previously handled comprises receiving an indication of whether the call has been forwarded from one of the plurality of individual subscriber telephones further comprising receiving an indication of whether the call is a forwarded call and wherein retrieving caller information and using the retrieved information are performed only if the call is a forwarded call.

10. (Currently Amended) The method of claim 9, if the call has not been previously handled by the voice mail system is not a forwarded call, further comprising:

requesting caller information from the caller;

storing received caller information in association with the call handle; and

using the received caller information to handle the call.

11. (Currently Amended) A machine-readable medium having stored thereon data representing instructions which, when executed by a machine, cause the machine to perform operations comprising:

receiving an incoming call at a voice mail port of a voice mail system an automated attendant from a connected private telephone switch, the telephone switch being coupled between the PSTN and a plurality of individual subscriber telephones, the incoming call coming to the switch through the PSTN, the voice mail system having greeting and message storage for at least some of the plurality of individual subscriber

telephones, the incoming call being directed to one of the plurality of individual subscriber telephones;

receiving a call handle associated with the incoming call at the voice mail system automated attendant from the telephone switch, the call handle being generated by the switch independent of the caller's identity and any data received from the caller;

receiving an indication from the switch of whether the call has been previously handled by the voice mail system;

applying the call handle to a database of the voice mail system to retrieve caller information stored in the voice mail system database that is associated with the call handle, if the call has been previously handled by the voice mail system; and

using the retrieved caller information at the voice mail system automated attendant to handle the call if caller information associated with the call handle is found; and

asking the caller to enter personal selections, if the call has not been previously handled by the voice mail system..

12. (Original) The medium of claim 11, wherein if no caller information associated with the call handle is found, the instructions, when executed by the machine, cause the machine to perform further operations comprising:

requesting caller information from the caller;

storing received caller information in association with the call handle; and

using the received caller information to handle the call.

13. (Currently Amended) The medium of claim 11, wherein if the call has not
been previously handled by the voice mail system ~~is not a forwarded call~~, the
instructions, when executed by the machine, cause the machine to perform further
operations comprising:

requesting caller information from the caller;

storing received caller information in association with the call handle; and

using the received caller information to handle the call.

14. (Currently Amended) An apparatus comprising:

a voice mail-~~an automated attendant~~ port to receive an incoming call from a
connected private telephone switch, the telephone switch being coupled between the
PSTN and a plurality of individual subscriber telephones, the incoming call coming to the
switch through the PSTN, the voice mail system having greeting and message storage for
at least some of the plurality of individual subscriber telephones, the incoming call being
directed to one of the plurality of individual subscriber telephones;;

a voice mail-~~an automated attendant~~ port to receive a call handle associated with
the incoming call from the telephone switch and an indication from the switch of whether
the call has been previously handled by the voice mail system, the call handle being
generated by the switch independent of the caller's identity and any data received from
the caller;

a memory containing caller information associated with call handles; and

a processor to apply the call handle to the memory to retrieve caller information
that is associated with the call handle and use the retrieved caller information to handle

the call if the call has been previously handled by the voice mail system and to ask the caller to enter personal selections, if the call has not been previously handled by the voice mail system ~~caller information associated with the call handle is found.~~

15. (Currently Amended) The apparatus of claim 14, wherein the voice mail system automated attendant port to receive the call handle comprises a digital interface.

16. (Original) The apparatus of claim 15, wherein the digital interface comprises a digital backplane connection to a switch from which the incoming call was received.

17. (Currently Amended) A method comprising:
receiving an incoming call at a private telephone switch through the PSTN, the call being directed to one of a plurality of individual subscriber telephones that are coupled to the switch;

generating a call handle ~~independent of the caller's identity and any data received from the caller as a set of in-band signaling tones~~ for the incoming call at the telephone switch;

routing the incoming call to a port of a connected call handling system, the call handling system having greeting and message storage for at least some of the plurality of individual subscriber telephones;

sending the call handle to the call handling system ~~as in-band signaling tones~~ in association with the routed call;

sending an indication to the call handling system of whether the call has been previously handled by the voice mail system in association with the routed call; and

~~receiving a transfer of the routed call at the telephone switch from the call handling system;~~

~~re-routing the incoming call from the telephone switch back to a port of the call handling system; and~~

~~sending the call handle as in-band signaling tones from the telephone switch to the call handling system in association with the re-routed call.~~

18. (Currently Amended) The method of claim 17, wherein sending the call handle comprises deriving a tone sequence for the identification, coding the tone sequence into tones and sending the tone sequence as a set of in-band signaling tones to the call handling system port.

19. (Previously Presented) The method of claim 18, wherein the tone sequence is a DTMF tone sequence transmitted to the call handling system port over the same transmission line as the incoming call.

20. (Original) The method of claim 17, wherein sending the call handle comprises sending an identification message through a digital interface.

21. (Previously Presented) The method of claim 20, wherein the digital interface comprises a digital backplane connection to the call handling system.

22. (Currently Amended) A machine-readable medium having stored thereon data representing instructions which, when executed by a machine, cause the machine to perform operations comprising:

receiving an incoming call at a private telephone switch through the PSTN, the
call being directed to one of a plurality of individual subscriber telephones coupled to the
switch;

generating a call handle independent of the caller's identity and any data received
from the caller as a set of in-band signaling tones for the incoming call at the telephone
switch;

routing the incoming call to a port of a connected call handling system, the call
handling system having greeting and message storage for at least some of the plurality of
individual subscriber telephones;

sending the call handle to the call handling system as in-band signaling tones in
association with the routed call;

sending an indication to the call handling system of whether the call has been
previously handled by the voice mail system in association with the routed call; and

receiving a transfer of the routed call at the telephone switch from the call
handling system;

re-routing the incoming call from the telephone switch back to a port of the call
handling system; and

sending the call handle as in-band signaling tones from the telephone switch to
the call handling system in association with the re-routed call.

23. (Original) The medium of claim 22, wherein the instructions for sending
the call handle comprise instructions which, when executed by the machine, cause the

machine to perform further operations comprising sending an identification message through a digital interface.

24. (Original) The medium of claim 23, wherein the digital interface comprises a digital backplane connection to the call handling system.

25. (Currently Amended) An apparatus comprising:

a port to receive an incoming call at a private telephone switch through the PSTN,
the call being directed to one of a plurality of individual subscriber telephone that are
coupled to the switch;

a call handle generator to generate a call handle for the incoming call at the
telephone switch independent of the caller's identity and any data received from the caller
as a set of in-band signaling tones,

a switching network to route the incoming call from the receiving port to a port of
a connected call handling system, the call handling system having greeting and message
storage for at least some of the plurality of individual subscriber telephones; and

an interface to send the generated call handle as in-band signaling tones and an
indication of whether the call has been previously handled by the call handling system to
the port of the call handling system in association with the routed call.

26. (Original) The apparatus of claim 25, wherein the interface comprises a digital interface.

27. (Original) The apparatus of claim 26, wherein the digital interface comprises a digital backplane connection to the call handling system.

28. (Original) The method of claim 1, further comprising releasing the call to the switch and, after a sufficient time, deleting caller information associated with the call handle.

29. (Original) The medium of claim 11, wherein the instructions further comprise instructions which, when executed by the machine, cause the machine to perform further operations comprising releasing the call to the switch and, after a sufficient time, deleting caller information associated with the call handle.

30. (Original) The method of claim 17, further comprising releasing the call and, after a sufficient time, reusing the call handle for another call.

31. (Original) The medium of claim 22, further comprising releasing the call and, after a sufficient time, reusing the call handle for another call.

32-35. (Canceled)